

REMARKS

Claims have been carefully reviewed in the light of the Examiner's action.

Claims 24-27 have been canceled and rewritten as new claims 28-31, to overcome objection by the Examiner based on informal wording in the claims, and to overcome rejection based on being indefinite.

New claims 28-31 are directed now only toward the method, as requested by the Examiner. The method includes novel way of controlling the web speed and its winding onto a spool. Claims 28-31 are also narrowed to overcome rejection based on being anticipated by Kejha (US 5,443,602) and thus differentiate from the prior art dip-coating methods of electrodes for lithium based electrochemical devices and capacitors cited by the Examiner.

Prior art dip-coating methods do not control the speed of the web before said dip-coating by using driven nip-rollers, and do not wind the web onto a spool by using an overdrive system with a slip clutch.

Controlling the web speed by the method of instant invention improves the uniformity of coating of any web, as it is explained in the prior Amendment of February 17, 2005, Page 11, lines 8-18.

Claims 15-18 are rejected by the Examiner as being anticipated by Kejha's Application No. 08/281,011.

Claims 15-18 are independent claims directed toward electrode structures only, and have been amended to clarify the difference from prior art current collectors as described in the Application # 08/281,011.

Claims 15-18 represent novel electrode structures for lithium based electrochemical devices and capacitors, having a grid, expanded foil, perforated foil, or a plain foil of a solid metal only, embedded in the middle by any dip-coating method.

No one suggested or reduced to practice these structures before the time of the invention. The above structures logically and practically provide for a higher volumetric power density (W/L) than prior art electrode structures, due to the combination of maximum conductive metal cross-section in a minimum given space, with a complete encapsulation of the metal by dip-coating, which results in maximum high surface contact with the current collector for the electrons transfer.

They are also lower cost electrodes, because the dip-coating cover both sides at once, unlike prior art pressing of separately made films of active materials onto a grid, which requires more steps. Claims 15-18 are supported by the Specification and Drawings.

Claims 14 and 23 have been amended to overcome rejection based on informality, i.e. the word “by” has been replaced by “with”.

Claims 5-14 and 19-23 are rejected by the Examiner as being obvious over prior art Patents of Kejha(US 5,443,602), Andersen et al. (US 6,280,879), Werner (US 3,694,392), and Iwanaga et al. (US 5,385,761).

To overcome these rejections, the above claims are defended by explanations below, in the same sequence as the Examiner's Items 11-13 :

Applicants agree with the Examiner, that Andersen at al. teach the primer for current collectors, which resulted in good adhesion. Therefore claims 5, 6 and 19 has been amended and the phrase “adhesion promoting” has been deleted. However, solvent

resistant primer is necessary for the vertical dip-coating to prevent wash-off, which is not taught by Andersen, because his horizontal coating method does not need such primer. Additionally, claims 5 and 6 are now dependent on new claims 28-31, and claim 19 is dependent on the amended claims 15-18, which should make them allowable.

Claims 7 and 8 has been amended to be dependent on new claims 28-31, which should make them also allowable, even if the features of claims 7 and 8 are known.

Claims 10 and 21 through amended claims 5 and 6 are also dependent on new claims 28-31.

Claims 11 and 22 with regards to masking tapes are different from prior art of Kejha (US Patent 5, 443,602). Kejha teaches the use of masking tapes over the terminal strips, not over the current collectors, which are different and separate parts.

Additionally, Andersen and Kejha do not teach the use of masking tapes prior to primer coating. The primer coating of Andersen may later prevent a good ultrasonic welding (metal to metal) of the stacked electrodes in the cells.

Claims 11 and 22 are also through amended claims 5 and 6 now dependent on new claims 28-31.

Claims 9 and 20 are now dependent through claims 5 and 6 on new claims 28-31, which should make them allowable even if Werner (US 3,694,392) teaches this primer.

Claims 14 and 23 are now also dependent on new claims 28-31, and additionally Andersen and Werner do not teach primer dip-coating with a horizontal pulling over a roller. The reason for this method is explained in the Specification, Page 13, lines

16-25.

Claims 12 and 13 have been amended to make them dependent on new claims 28-31 , and the cleaning step of “removing said coating” has been added, which is supported by the Specification , Page 14, lines 14-17. This is very different from prior art of Iwanga et al. , which teach removing a mask and its adhesive from the collector.

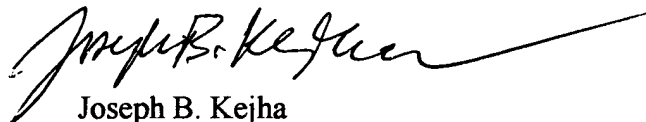
No new matter has been added.

All above amended and new claims were discussed during applicant's personal interview with the Examiner on July 26, 2005 at the PTO , and over the phone on July 28, 2005. It was agreed that the above claims corrections would make them potentially allowable, pending further search.

It is believed that the claims define new and unobvious subject matter.

Accordingly, it is believed, that the amendment places the application in condition for allowance and such action is requested and urged.

Respectfully submitted,


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